Seq. Alignments

RESULT 5
AAX34988
ID AAX34988 standard; DNA; 30 BP.
XX
AC AAX34988;
XX
DT 30-JUN-1999 (first entry)
XX
DE Antisense oligonucleotide targeted to protein kinase A-RI-alpha gene.
XX
KW Human protein kinase A-RI-alpha gene; antisense oligonucleotide;
KW carcinostatic; leukemia; large intestinal cancer; rectal cancer;
KW colon cancer; lung cancer; stomach cancer; hepatic cancer; melanoma;
KW malignant lymphoma; tongue cancer; oesophagus cancer; breast cancer;
KW uterus cancer; pharynx cancer; brain tumour; malignant myoma; ss.
XX
OS Synthetic.
OS Homo sapiens.
XX
PN WO9616976-A1.
XX
PD 06-JUN-1996.
XX
PF 01-DEC-1995; 95WO-JP002452.
XX
PR 02-DEC-1994; 94JP-00324006.
XX
PA (POKK) POLA CHEM IND INC.
XX
PI Tsuchiya M, Geiser TG;
XX
DR WPI; 1996-277711/28.

XX
PT Oligo:nucleotide contg. human protein kinase A gene sequence - useful as
PT carcinostatic agent.
XX
PS Claim 7; Page 16; 24pp; Japanese.
XX
CC The present sequence represents an antisense oligonucleotide directed
CC against the human protein kinase A-RI-alpha gene. The antisense
CC oligonucleotides is useful as a carcinostatic agent, e.g. for treating
CC leukaemia, large intestinal cancer, rectal cancer, colon cancer, cancer
CC of the lung or stomach, hepatic cancer, malignant lymphoma, cancer of the
CC tongue, oesophagus, breast, uterus or pharynx, brain tumour, melanoma, or
CC malignant myoma
XX
SQ Sequence 30 BP; 3 A; 11 C; 8 G; 8 T; 0 U; 0 Other;

Query Match 100.0%; Score 21; DB 2; Length 30;
Best Local Similarity 76.2%; Pred. No. 7.5;
Matches 16; Conservative 5; Mismatches 0; Indels 0; Gaps 0;

```
Qy          1 GGCUGCGUGCCUCCUCACUGG 21
              |||:|||:|||:||:|||:||
Db          9 GGCTGCGTGCCTCCTCACTGG 29
```

RESULT 6
AAZ30811/c
ID AAZ30811 standard; RNA; 30 BP.
XX
AC AAZ30811;
XX
DT 05-JAN-2000 (first entry)
XX
DE Synthetic substrate RNA 30mer

DE Synthetic substrate RNA 30mer.
XX
KW Oligonucleotide; phosphorothioate; phosphodiester; linkage; POPS block;
KW stability; antisense; RNase H; activation; cleavage; gene therapy;
KW immune effects; ss.
XX
OS Synthetic.
XX
PN WO9950409-A1.
XX
PD 07-OCT-1999.
XX
PF 01-APR-1999; 99WO-US007276.
XX
PR 01-APR-1998; 98US-0080321P.
XX
PA (HYBR-) HYBRIDON INC.
XX
PI Zhou WQ, Agrawal S;
XX
DR WPI; 1999-610851/52.
XX
PT Antisense oligonucleotides with alternating phosphodiester and
PT phosphorothioate nucleosides, used to control the expression of specific
PT genes.
XX
PS Example 3; Page 11; 27pp; English.
XX
CC This sequence represents a synthetic RNA 30mer, used as a substrate for
CC studies of the effects of novel antisense oligonucleotides (AAZ30809-
CC Z30810) on RNase H activity. The novel antisense oligonucleotides
CC comprise a region containing an alternating nucleoside phosphodiesters
CC (PO) and nucleoside phosphorothioates (PS), designated a POPS block. The
CC antisense oligonucleotides have a reduced phosphorothioate content

CC antisense oligonucleotides have a reduced phosphorothioate content
CC without compromising their antisense properties, such as duplex
CC stability, nuclease stability, RNase H activity, antisense-based
CC biological activity and tissue disposition. They can reduce the
CC phosphorothioate oligonucleotide-related side effects of gene therapy
CC such as immune stimulation, complement activation and prolongation of
CC partial thromboplastin time. The antisense oligonucleotides can be used
CC to control the expression of specific genes. They can be labelled with a
CC reporter group and used as probes in conventional nucleic acid
CC hybridisation assays. They can also be used as antisense probes of a
CC specific gene function by being used to block the expression of a
CC specific gene in an experimental cell culture or animal system and to
CC evaluate the effect of blocking such specific gene expression at selected
CC stages of development or differentiation. The oligonucleotides may also
CC be used for therapy in the treatment of diseases resulting from aberrant
CC gene expression (e.g., cancer)
XX
SQ Sequence 30 BP; 6 A; 10 C; 11 G; 0 T; 3 U; 0 Other;

Query Match 100.0%; Score 21; DB 2; Length 30;
Best Local Similarity 76.2%; Pred. No. 7.5;
Matches 16; Conservative 5; Mismatches 0; Indels 0; Gaps 0;

```
Qy          1 GGCUGCGUGCCUCCUCACUGG 21
              |||:|||:|||:||:|||:||
Db         28 GGCTGCGTGCCTCCTCACTGG 8
```

RESULT 7
ADP83666
ID ADP83666 standard; RNA; 20 BP.
XX
AC ADP83666;
XX

```
CC   of protein kinase A subunit RI-alpha gene expression. Such
CC   oligonucleotides produced fewer side effects than conventional
CC   oligonucleotides e.g. reduced mitogenicity, reduced activation of
CC   complement and reduced anti-thrombotic properties. By controlling the
CC   regulation of protein kinase A subunit RI-alpha, inhibition of the
CC   proliferation of cancer cells and tumour growth is possible. This is a
CC   novel method for the treatment of disease caused by the overexpression or
CC   inappropriate expression of this gene
XX
SQ   Sequence 18 BP; 1 A; 8 C; 5 G; 2 T; 2 U; 0 Other;

  Query Match             81.0%;  Score 17;  DB 2;  Length 18;
  Best Local Similarity   88.2%;  Pred. No. 4.8e+02;
  Matches   15;  Conservative    2;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          5 GCGUGCCUCCUCACUGG 21
              |||:|||||||||||:||
Db          1 GCGTGCCUCCUCACTGG 17


RESULT 23
AAT64407
ID   AAT64407 standard; DNA; 18 BP.
XX
AC   AAT64407;
XX
DT   02-FEB-1998  (first entry)
XX
DE   Protein kinase A subunit RI-alpha synthetic oligonucleotide #165.
XX
KW   DNA/RNA hybrid; antisense; hybrid; inverted hybrid; mitogenicity;
KW   inverted chimeric hybrid; protein kinase A subunit RI-alpha gene;
KW   anti-thrombotic properties; cancer cell proliferation; tumour;
KW   ribonucleotide; ss.
```

KW ribonucleotide; ss.
XX
OS Synthetic.
XX
FH Key Location/Qualifiers
FT misc_RNA 1. .4
FT /*tag= a
FT /note= "ribonucleotide"
FT misc_RNA 15. .18
FT /*tag= b
FT /note= "ribonucleotide"
XX
PN WO9711171-A1.
XX
PD 27-MAR-1997.
XX
PF 19-SEP-1996; 96WO-US015084.
XX
PR 22-SEP-1995; 95US-00532979.
XX
PA (HYBR-) HYBRIDON INC.
XX
PI Agrawal S;
XX
DR WPI; 1997-202880/18.
XX
PT Modified protein kinase A specific oligo:nucleotide(s) - are useful for
PT the treatment of cancer.
XX
PS Claim 4; Page 17; 66pp; English.
XX
CC This sequence represents a synthetic, modified antisense oligonucleotide
CC (#165) which was designed as a hybrid. This oligonucleotide was found to
CC reduce tumour growth in mice if administered orally or by intraperitoneal

CC reduce tumour growth in mice if administered orally or by intraperitoneal
CC injection. The modified oligonucleotide types used in this study were
CC hybrid, inverted hybrid or inverted chimeric hybrid and were used to
CC investigate the down regulation of protein kinase A subunit RI-alpha gene
CC expression. Such oligonucleotides produced fewer side effects than
CC conventional oligonucleotides e.g. reduced mitogenicity, reduced
CC activation of complement and reduced anti-thrombotic properties. By
CC controlling the regulation of protein kinase A subunit RI-alpha,
CC inhibition of the proliferation of cancer cells and tumour growth is
CC possible. This is a novel method for the treatment of disease caused by
CC the overexpression or inappropriate expression of this gene
XX
SQ Sequence 18 BP; 1 A; 8 C; 5 G; 2 T; 2 U; 0 Other;

Query Match 81.0%; Score 17; DB 2; Length 18;
Best Local Similarity 88.2%; Pred. No. 4.8e+02;
Matches 15; Conservative 2; Mismatches 0; Indels 0; Gaps 0;

```
Qy          5 GCGUGCCUCCUCACUGG 21
              |||||||:||:||||||
Db          1 GCGUGCCTCCTCACUGG 17
```

RESULT 24
AAT64404
ID AAT64404 standard; DNA; 18 BP.
XX
AC AAT64404;
XX
DT 02-FEB-1998 (first entry)
XX
DE Protein kinase A subunit RI-alpha synthetic oligonucleotide #164.
XX
KW Antisense; hybrid; inverted hybrid; mitogenicity...

US-07-702-163B-2
; Sequence 2, Application US/07702163B
; Patent No. 5271941
; GENERAL INFORMATION:
; APPLICANT: Yoon S. Cho-Chung
; TITLE OF INVENTION: ANTISENSE OLIGONUCLEOTIDES FOR TREATMENT OF CANCER
; NUMBER OF SEQUENCES: 7
; CORRESPONDENCE ADDRESS:
; ADDRESSEE: Sterne, Kessler, Goldstein and Fox
; STREET: 1225 Connecticut Avenue, N.W.
; CITY: Washington
; STATE: D.C.
; COUNTRY: USA
; ZIP: 20036
; COMPUTER READABLE FORM:
; MEDIUM TYPE: Floppy disk
; COMPUTER: IBM PC compatable
; OPERATING SYSTEM: DOS
; SOFTWARE: PatentIn
; CURRENT APPLICATION DATA:
; APPLICATION NUMBER: US/07/702,163B
; FILING DATE: 19910520
; CLASSIFICATION: 424
; PRIOR APPLICATION DATA:
; APPLICATION NUMBER: none
; FILING DATE: none
; ATTORNEY/AGENT INFORMATION:
; NAME: Robert W. Esmond
; REGISTRATION NUMBER: 32,893
; REFERENCE/DOCKET NUMBER: 1350.0040004
; TELECOMMUNICATION INFORMATION:
; TELEPHONE: (202)466-0800
; TELEFAX: (202)833-8716
; TELEX: 248636 SSI

```
;       TELEX:  248636 SS1
;  INFORMATION FOR SEQ ID NO:  2:
;    SEQUENCE CHARACTERISTICS:
;       LENGTH:  18 bases
;       TYPE:  NUCLEIC ACID
;       STRANDEDNESS:  Single
;       TOPOLOGY:  linear
;    MOLECULE TYPE:  DNA
;    ANTI-SENSE:  yes
US-07-702-163B-2

  Query Match             81.0%;  Score 17;  DB 2;  Length 18;
  Best Local Similarity   76.5%;  Pred. No. 1.4e+02;
  Matches   13;  Conservative    4;  Mismatches    0;  Indels    0;  Gaps    0;

Qy          5 GCGUGCCUCCUCACUGG 21
              |||:|||:||:|||:||
Db          1 GCGTGCCTCCTCACTGG 17


RESULT 2
US-08-060-984-2
; Sequence 2, Application US/08060984
; Patent No. 5627158
;  GENERAL INFORMATION:
;    APPLICANT:  Yoon S. Cho-Chung
;    TITLE OF INVENTION:  ANTISENSE OLIGONUCLEOTIDES FOR TREATMENT OF CANCER
;    NUMBER OF SEQUENCES:  7
;    CORRESPONDENCE ADDRESS:
;       ADDRESSEE:  Sterne, Kessler, Goldstein and Fox
;       STREET:  1225 Connecticut Avenue, N.W.
;       CITY:  Washington
;       STATE:  D.C.
;       COUNTRY:  USA
```